

Deriv 60650

Skid-  
29/07/08

# Work Order ID 37539

June 26, 2009 10:27:54 AM



Page 1

Item ID: D3391-011

Accept



Setup Start



Revision ID: H

Item Name: Fwd Tube Assembly

Stop



Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: *WTF*

Date:

10-4-00

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3391

Rev H

100

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

Cut extrusion to 46.52 +0.010 -0.020

110

0.00



BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Bend as per Dwg D3391

120

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

# Work Order ID 37539

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Page 2

Item ID: D3391-011

Accept



Setup Start



Revision ID: H

Stop



Item Name: Fwd Tube Assembly

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130



HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

0.00

Memo

0.00

1-Machine as per Folio FA590 Rev. \_\_\_\_ & Dwg D3391 Rev. \_\_\_\_ ☐ Identify as  
D3391-1 ☐ 2-Deburr

140



QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

0.00

Memo

0.00

150



Mill Conv

Conventional Milling Machine

CONVENTIONAL MILLING MACHINE

0.00

Memo

0.00

1-Drill .1875" at end of tube as per Dwg D3391

# Work Order ID 37539

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Page 3

Item ID: D3391-011  
Revision ID: H  
Item Name: Fwd Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00  
Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160



QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

0.00

Memo

0.00

170



QC

Quality Control

QC8- Inspect parts - second check

0.00

Memo

0.00

180



Skidtubes

Skidtubes

Skidtubes

0.00

Memo

0.00

1-Drill and c/sink float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size) (DRILL ALL HOLES) 2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step 13-Open tow cap holes

*[Handwritten signature]*

11/01/4/5

**Work Order ID 37539**

June 26, 2009 10:27:54 AM



Page 4

Item ID: D3391-011  
Revision ID: H  
Item Name: Fwd Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00  
Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: Date:  
QC: Date:

Tooling: Date:  
SPC (Y/N): Date:

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

8/06/06

200



HandFinish

Hand Finishing

Chemical Conversion Coat per QSI005 4.1

Memo

0.00

0.00

210



QC

Quality Control

QC3- Inspect Part Finish

Memo

0.00

0.00

# Work Order ID 37539

June 26, 2009 10:27:54 AM



Page 5

Item ID: D3391-011  
Revision ID: H  
Item Name: Fwd Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00  
Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:  
QC: Date: SPC (Y/N): Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220 	Skidtubes	0.00							
Skidtubes	Memo	0.00							
Skidtubes	1-Install crossbolt spacers per dwg D3391 GA/R Magnabond 6398 batch: _____ 12- Grind flush 13- back drill crossbolt if necessary								
230 	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
240 	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
Powdercoat	Memo	0.00							
Powder Coating	START TIME: 3:15 FINISH TIME: 3:45 OVEN TEMPERATURE: 320°								

506213

Ⓢ

M 11484

① BK 10-7-13

**Work Order ID 37539**

June 26, 2009 10:27:54 AM



Page 6

Item ID: D3391-011

Accept



Setup Start



Revision ID: H

Item Name: Fwd Tube Assembly

Stop



Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

250



QC

Quality Control

QC3- Inspect Part Finish

0.00

ML

10/07/14

1

0

Memo

0.00

260



Packaging

Packaging

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00

Memo

0.00

270



Skidtubes

Skidtubes

Skidtubes

0.00

Memo

\*\*\*\* install D3591-1 spacer as per DSI9364 \*\*\*\*

0.00

ML 10/07/14

1 0

**Work Order ID 37539**

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Page 7

Item ID: D3391-011

Accept

Revision ID: H

Item Name: Fwd Tube Assembly

Setup Start

Stop

Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

Stop

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

w/o's me new  
correct. This is wa  
order one.

10A-15  
MF  
10-7-15

# Picklist Print

June 26, 2009 10:27:54 AM

Page 1

Work Order ID: 37539

Parent Item: D3391-011RevH

Parent Item Name: Fwd Tube Assembly



Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ D6013-047RevA  Skidtube Material		Manufactured	No			220	Each	0.0000	1.0000 			



Date: Wednesday, 2/20/2008 4:23:06 PM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : FWD TUBE ASSEMBLY
Job Number : 37539	
Estimate Number : 11444	
P.O. Number :	Part Number : D3391011
This Issue : 2/20/2008 S.O. No. :	Drawing Number : D3391 REV G
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : MACHINED PARTS	Drawing Revision : G
Previous Run : 36805	Material :
Written By :	Due Date : 3/15/2008 Qty: 1 Um: Each
Checked & Approved By : <u>JA 08 02 21</u>	
Comment : Est. A 05.09.13 New issue KJ/JLM	
Est. B 06.02.09 Dwg rev.D EC	
est C 07.03.13 revF dwg ec	
est D 07.11.01 ecn1053P EC	
Est Rev:E ECN 1056 07-11-12 DD verified by:EC	

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0 ✓	D6013047	SKIDTUBE MAT'L
-------	----------	----------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
 SKIDTUBE MAT'L

Pick:

Qty	Part Number	Description	Batch
1	D6013047	Extrusion	B26547

Batch

B26547

EL 8-4-1

2.0 ✓	LANDING GEAR 1	LANDING GEAR RESOURCE 1
-------	----------------	-------------------------



Comment: LANDING GEAR RESOURCE 1  
 Cut extrusion to 46.52 +0.010 -0.020

EL 8-4-1

3.0 ✓	BENDING	BENDING MACHINE
-------	---------	-----------------



Comment: No bender  
 Bend as per Dwg D3391

EL 8-4-1

4.0 ✓	QC5	INSPECT WORK TO CURRENT STEP
-------	-----	------------------------------



Comment: INSPECT WORK TO CURRENT STEP

DP 8-4-1

5.0 ✓	HAAS1	HAAS CNC VERTICAL MACHINING #1
-------	-------	--------------------------------



Comment: HAAS CNC VERTICAL MACHINING #1  
 1-Machine as per Folio FA590 Rev. AA & Dwg D3391 Rev. G  
 Identify as D3391-1

Wk 08/07/16

①

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 2/20/2008 4:23:06 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 37539

Part Number: D3391011

Job Number:



Seq. #:

Machine Or Operation:

Description:

2-Debur

6.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

08/07/16

①

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

08/07/16

②

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill and c'sink float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)  
(DRILL ALL HOLES)

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

X 5-Drill wearplate holes as per Dwg D3391 Using Dt8217

6-Debur

8-7-17

9.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

SL 8-7-24

10.0

D36704200

SPACER



Comment: Qty.: 9.0000 Each(s)/Unit Total: 9.0000 Each(s)

SPACER

BATCH: 36616

SL 8-7-24

11.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install crossbolt spacers per dwg D3391

SL 8-7-24

A/R Magnabond 6398 batch: 107621

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 37539

Part Number: D3391011

Job Number:



Seq. #:

Machine Or Operation:

Description:

2- Grind flush

SL 8-7-29

12.0

QC5

INSPECT WORK TO CURRENT STEP



S 10/07/13



Comment: INSPECT WORK TO CURRENT STEP

S 02/07/09

13.0

POWDER COATING

POWDER COATING



M114841



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

BR 10-7-13

14.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

HJ

10/07/14

x1

15.0

D3401041

Tow Cap Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Tow Cap Assembly

Pick:

Qty Part Number Description Batch

1. D3401-041 Tow Cap B50316

HJ

16.0

D356413

WEARSHOE



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARSHOE

B57922

HJ

17.0

D356613

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

B53461

HJ

18.0

D36721

PHENOLIC WASHER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

PHENOLIC WASHER

B51674

HJ 10/07/14

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Wednesday, 2/20/2008 4:23:06 PM

User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 37539

Part Number: D3391011

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

AN3C4A

BOLT



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Bolt

Pick:

Qty

Part Number

Description

Batch

4

AN3C4A

Bolt

M 114859

JL

20.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Washer

Pick:

Qty

Part Number

Description

Batch

4

AN960C10L

Washer

M 115000

NAS 1149C0332R

JL

21.0

ALS41032130

Insert



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

INSERT

or equivalent per QSI 017

M 114723

JL

22.0

ALS41032225

Insert



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

INSERT

or equivalent per QSI 017

M 110768

JL

23.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE 1

Install inserts and Tow Cap as per Dwg D3391

Identify as D3391-021

JL 10/07/14

X1

24.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect thread of each insert using DT8821

Siddons

40

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Date: Wednesday, 2/20/2008 4:23:06 PM

User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 37539

Part Number: D3391011

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

W/056716

D412-742-041

HP

10/02/14

V1

26.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

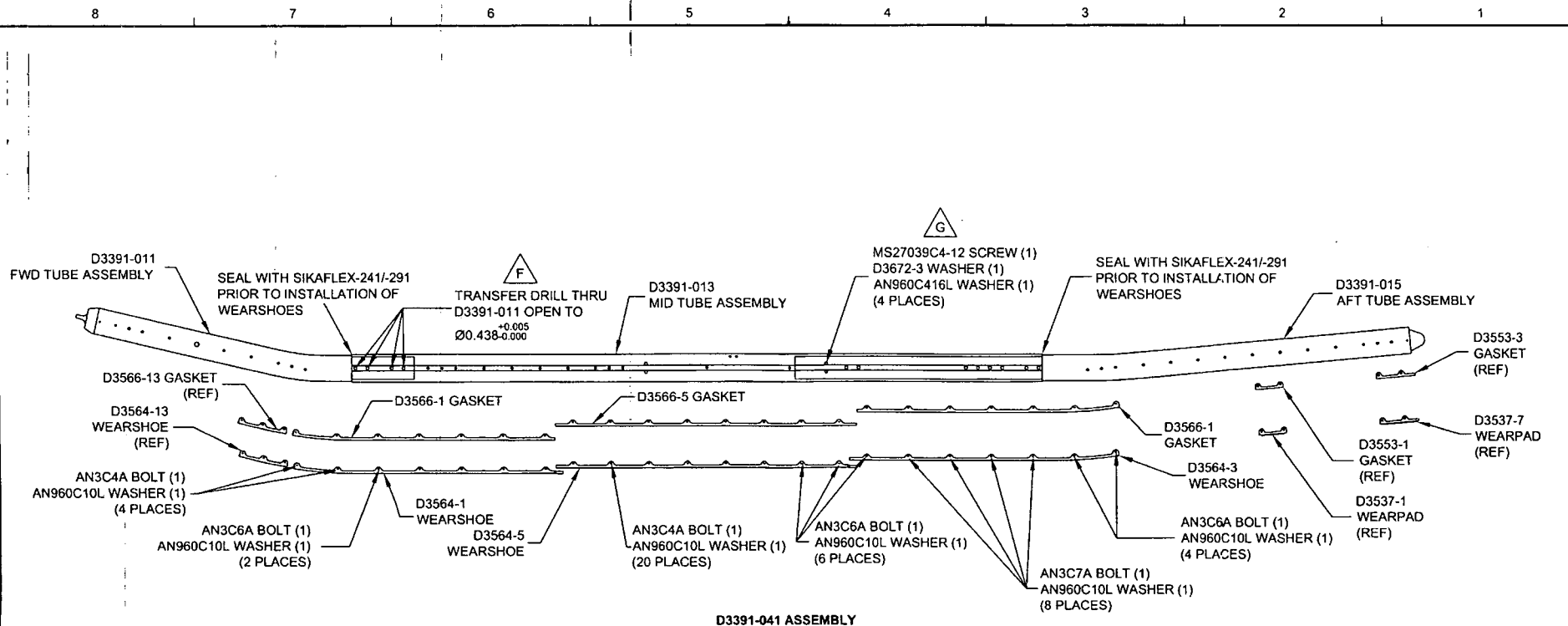
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries





**D3391-041 ASSEMBLY**

**RELEASED**  
07-11-06

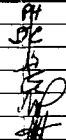
**D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

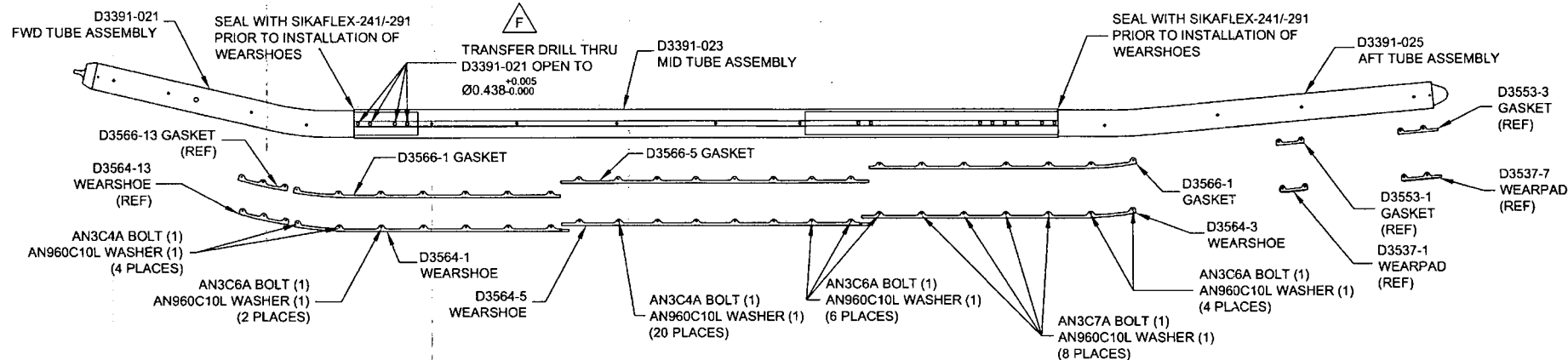
QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.  
TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED  
UNITS: INCHES UNLESS OTHERWISE NOTED  
USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.

NO  
32  
539  
FOR ORDER  
WITHOUT NOTICE  
UNCONTROLLED COPY  
ENGINEERING  
RETURN TO  
OF COPY

G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS. DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN		<b>DART AEROSPACE USA, INC</b>	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. G
MFG. APPR.		D3391	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	



**D3391-043 ASSEMBLY**

RELEASED  
07.11.94

**D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

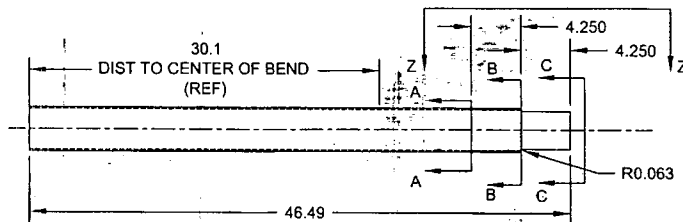
QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

**GENERAL NOTES**

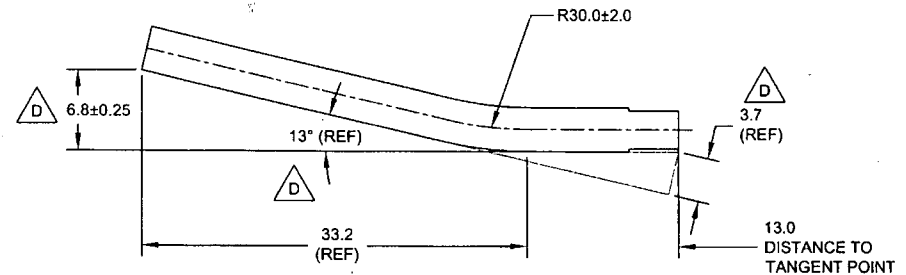
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	JLC	PORT HADLOCK, WA	
CHECKED	B	DRAWING NO.	REV. G
MFG. APPR.	PH	D3391	SHEET 2 OF 8
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	412 FLOAT SKIDTUBE	NTS
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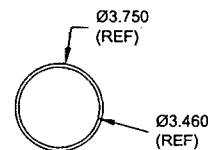
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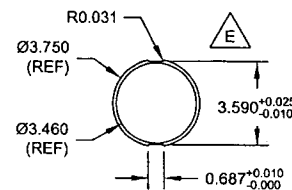
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



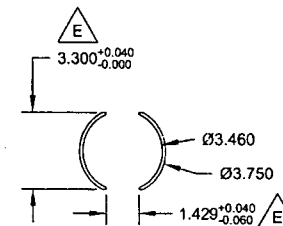
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



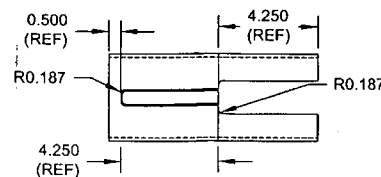
**SECTION A-A**  
(SCALE 1:5)



**SECTION B-B**  
(SCALE 1:5)



**SECTION C-C**  
(SCALE 1:5)

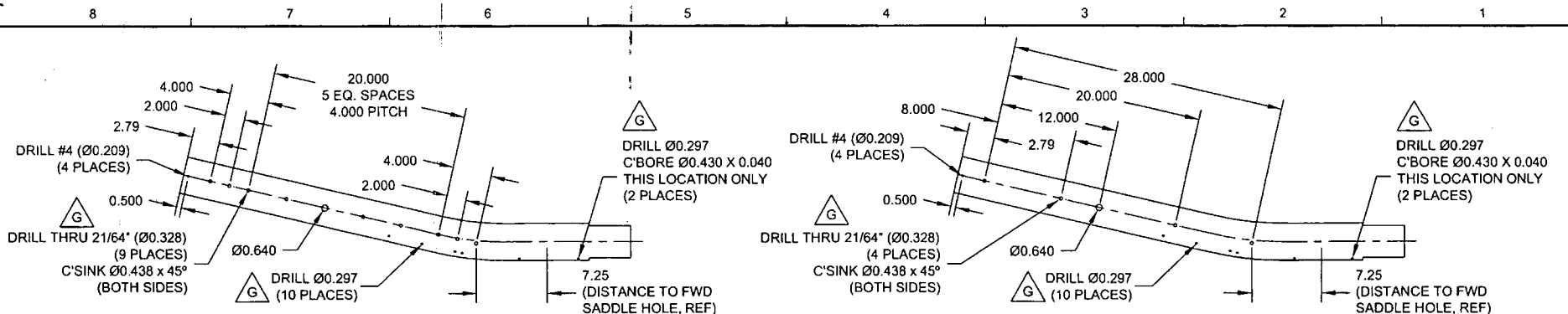


**VIEW Z-Z**  
(SCALE 1:5)

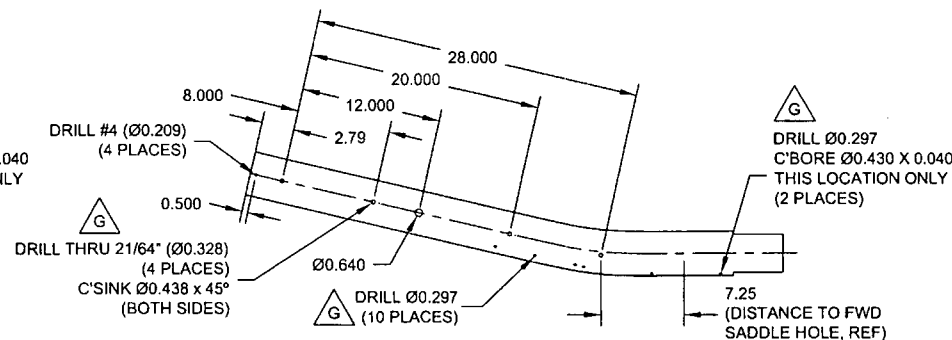
RELEASED  
07-11-06 MP

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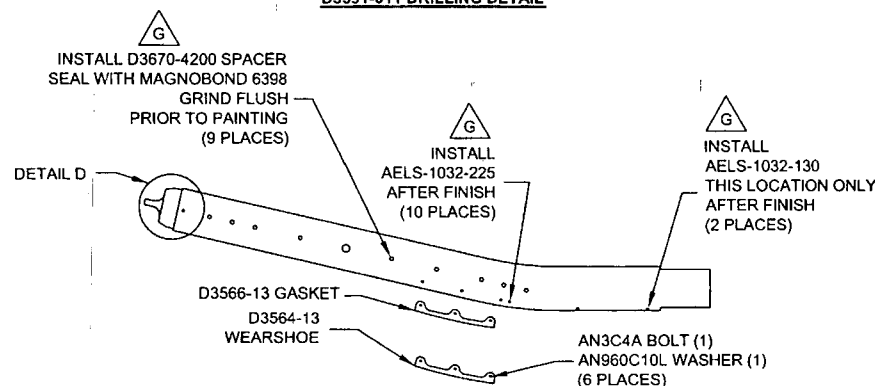
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CHECKED	+	DRAWING NO.	REV. G
MFG. APPR.	SC	D3391	SHEET 3 OF 8
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DE APPR.	MP	412 FLOAT SKIDTUBE	1:10
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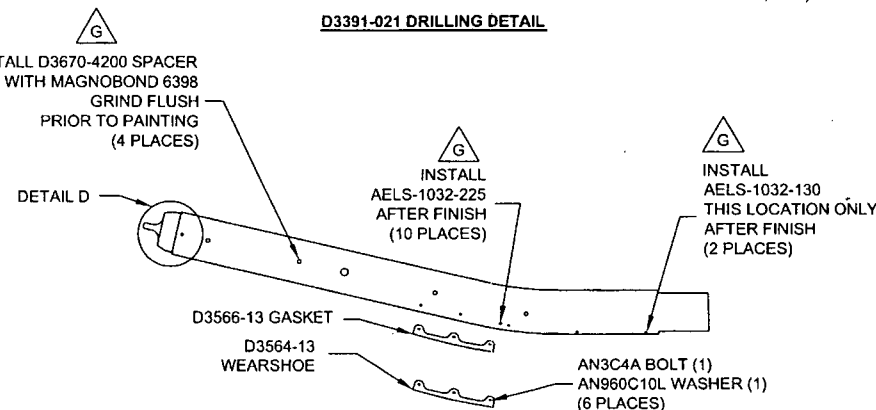
**D3391-011 DRILLING DETAIL**



**D3391-021 DRILLING DETAIL**



**D3391-011 ASSEMBLY DETAIL**



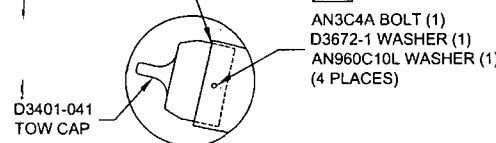
**D3391-021 ASSEMBLY DETAIL**

**RELEASED**  
07-11-06

**D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST**

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT

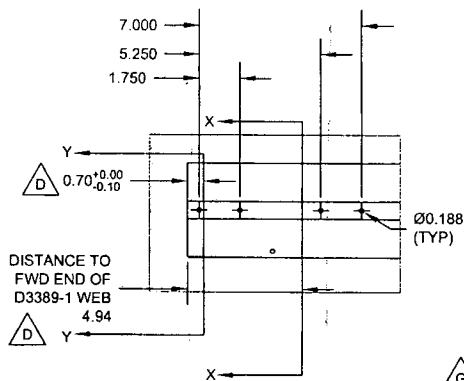
SEAL WITH SIKAFLEX-241/-291



**DETAIL D (SCALE 1:5)**

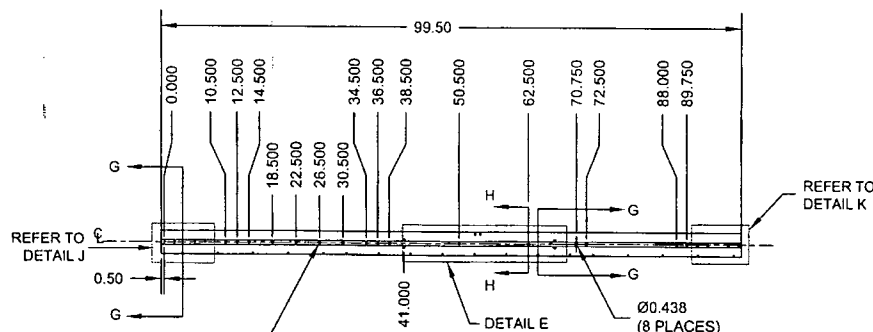
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MFG. APPR.	SE	D3391	SHEET 4 OF 8
APPROVED	SE	TITLE	SCALE
DE APPR.	SE	412 FLOAT SKIDTUBE	1:10
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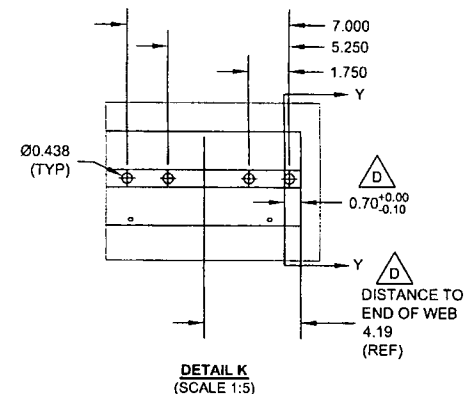


DETAIL J  
(SCALE 1:5)

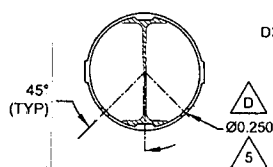
DRILL THRU 21/64" (Ø0.328)  
C'SINK Ø0.438 X 45° (BOTH SIDES)  
(12 PLACES)



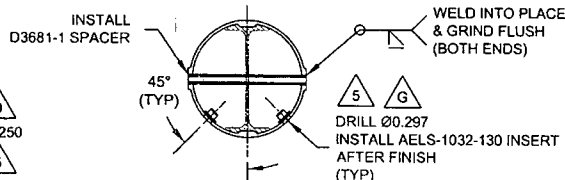
D3391-013 ASSEMBLY DETAIL



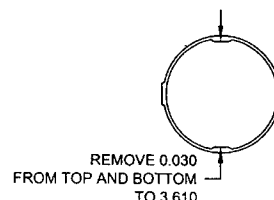
DETAIL K  
(SCALE 1:5)



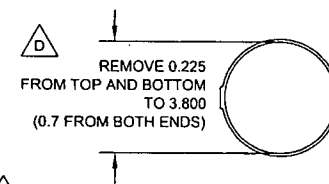
SECTION G-G  
(SCALE 1:4)



SECTION H-H  
(SCALE 1:4)

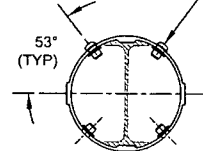


SECTION X-X  
(SCALE 1:4)

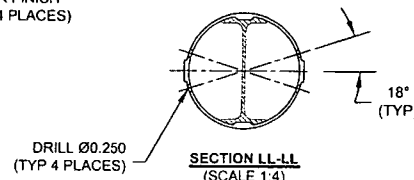


SECTION Y-Y  
(SCALE 1:4)

DRILL Ø0.297  
INSTALL AELS-1032-130 INSERT  
MS27039C1-09 SCREW  
D3672-1 WASHER  
AN960C10L WASHER  
AFTER FINISH  
(TYP 4 PLACES)



SECTION M-M  
(SCALE 1:4)



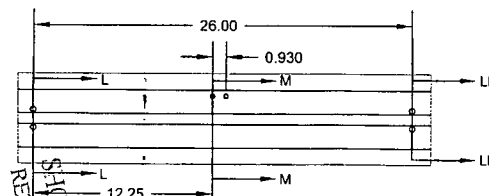
SECTION LL-LL  
(SCALE 1:4)

D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
12	D3681-1	SPACER
4	D3672-1	WASHER
4	D3672-3	WASHER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

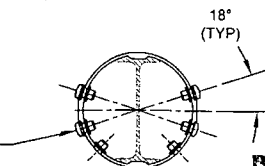
D3391-013 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- WELDING: PER DART QSI 004



DETAIL E  
(SCALE 1:8)

DRILL Ø0.391  
INSTALL ALS4-428-165 INSERT  
MS27039C4-08 SCREW  
D3672-3 WASHER  
AN960C416L WASHER  
AFTER FINISH  
(TYP 4 PLACES)



SECTION L-L  
(SCALE 1:4)

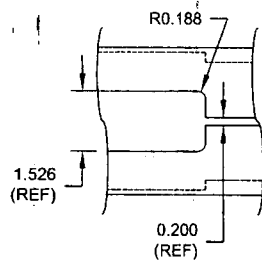
RELEASED  
27.11.2017

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	DP	PORT HADLOCK, WA
CHECKED	DP	DRAWING NO. D3391
MFG. APPR.	DP	REV. G SHEET 5 OF 8
APPROVED	DP	TITLE 412 FLOAT SKIDTUBE
DE APPR.	DP	SCALE 1:20
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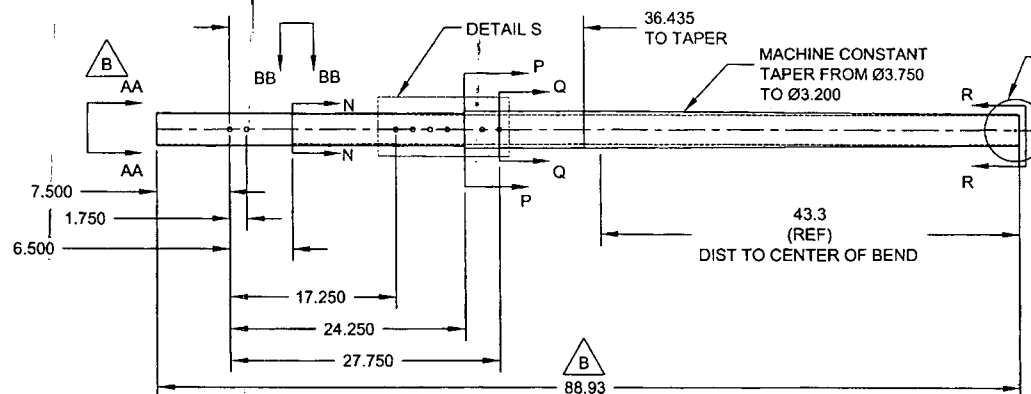
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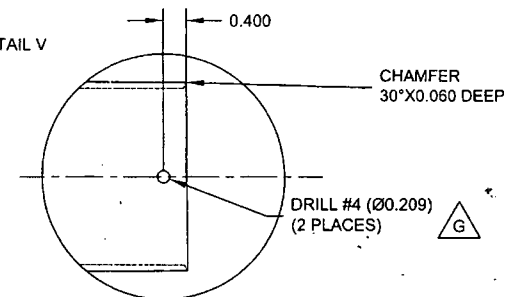




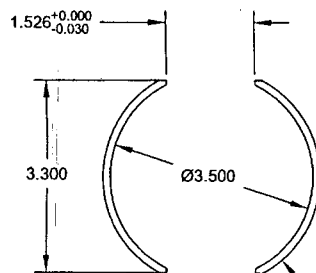
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(SCALE 1:3)



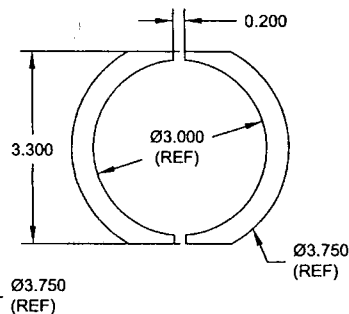
**D3391-3 AFT DRILLING AND CUTTING DETAIL**  
(MAKE FROM D6014-090 SKIDTUBE MATERIAL)



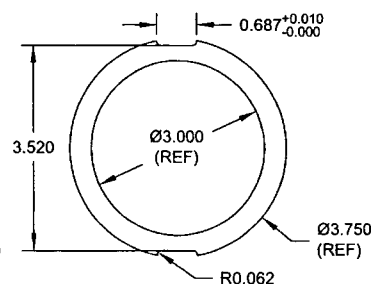
**DETAIL V**  
(SCALE 1:2)



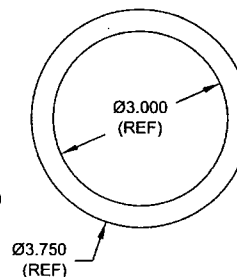
**SECTION AA-AA**  
(SCALE 1:2)



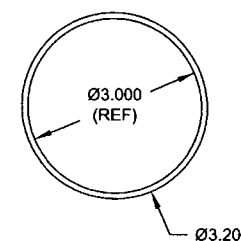
**SECTION N-N**  
(SCALE 1:2)



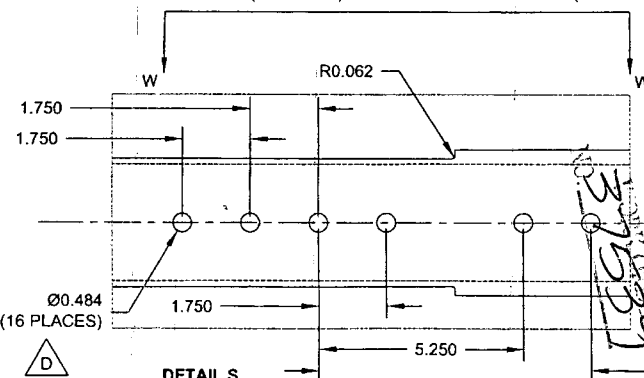
**SECTION P-P**  
(SCALE 1:2)



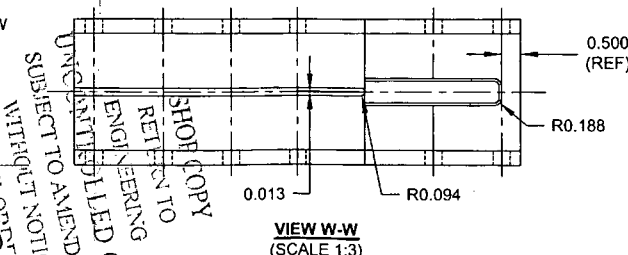
**SECTION Q-Q**  
(SCALE 1:2)



**SECTION R-R**  
(SCALE 1:2)



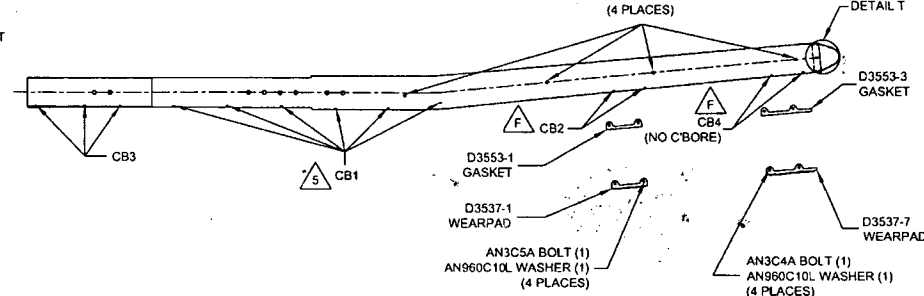
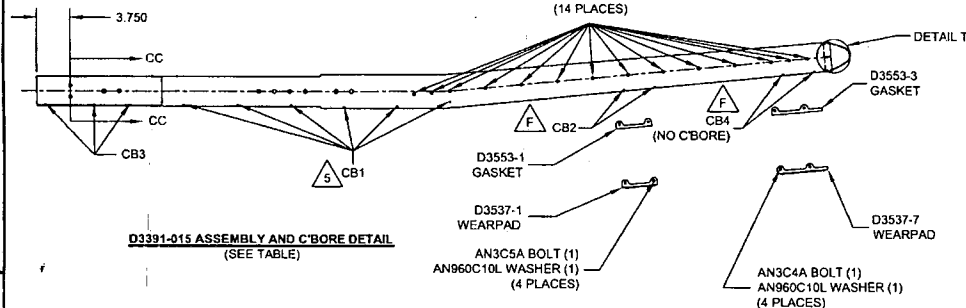
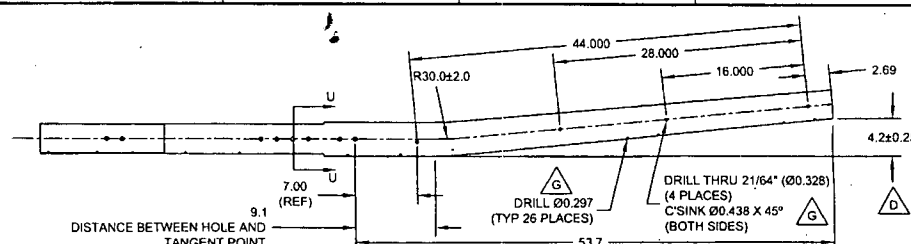
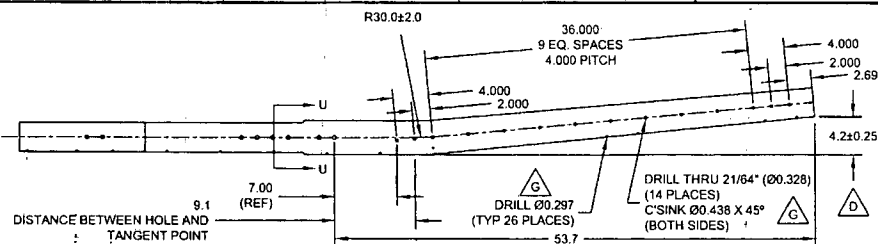
**DETAIL S**  
(SCALE 1:3)



**VIEW W-W**  
(SCALE 1:3)

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CHECKED		DRAWING NO. REV. G
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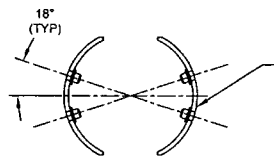
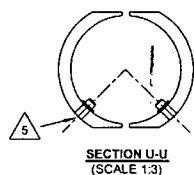


D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

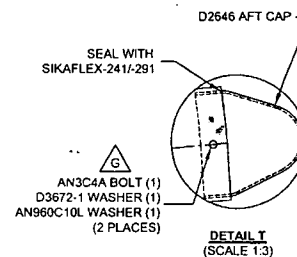
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4	4	ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

C'BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	C'BORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130



DRILL Ø0.391 C'BORE Ø0.516 X 0.040 DEEP INSTALL ALS4-428-165 INSERT (1) (4 PLACES)

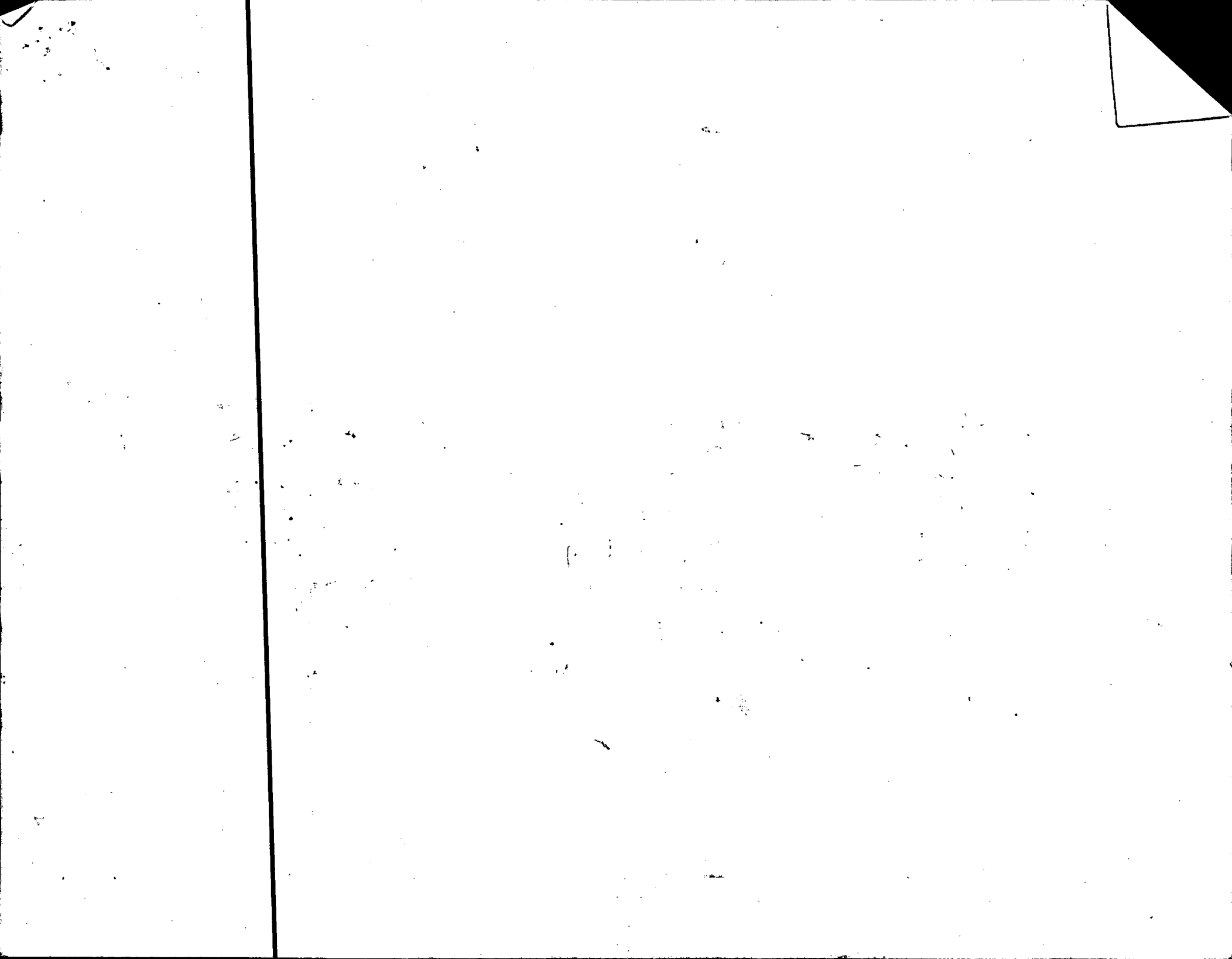


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CHECKED	DC	DRAWING NO.	REV. G
MFG. APPR.	DC	D3391	SHEET 8 OF 8
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# Work Order Summary

November 6, 2009 11:58:09 AM

Page 1 of 2

Criteria : Work Order ID: 37539 Item ID: D3391-011RevH Product Family SKIDTUBES  
 Work Order Start Dates 7/15/09 to 7/15/09 11:59:59 PM Work Order Required Dates 8/03/09 to 8/03/09  
 11:59:59 PM

All References

Work Order Status Released

Work Order ID	37539	Required Qty	1.0000	Status Code	Released
Item ID	D3391-011RevH	Accepted Qty	0.0000	Scrap Qty	0.0000
Item Name	Fwd Tube Assembly				
Current Acct Value	\$94.804	Sales Order ID			

Start Date	7/15/09	Required Date	8/03/09	Completed Date	
Standard	** Actual **	** Acct. Value **	** Variance **	** Variance % **	

Direct Costs	Total	Each	Each	Each	Each
Material	\$80.610	\$0.000	\$94.804	\$94.804	100.00%
Labor	\$183.736	\$0.000	\$0.000	\$0.000	0.00%
Outplant	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Variable Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$512.978	\$0.000	\$0.000	\$0.000	0.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
<b>** Total **</b>	<b>\$777.324</b>	<b>\$0.000</b>	<b>\$94.804</b>	<b>\$94.804</b>	

Item ID/ Item Name	Required Qty	Issue Code	Issue Date	Issued Qty	Cost Amount
ZWIP	0.0000				
Opening WIP BALANCE MATERIAL COST			6/25/09	80.6100	\$80.610
				<b>Total Matl Amts:</b>	<b>\$80.610</b>

## Work Center

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
ZWIP												
6/25/09												
N/A			0.00	0.00	171.02	171.02	1.00	\$0.000	\$171.020	\$495.958	\$0.000	\$666.97
6/26/09												
N/A			0.00	0.00	1.89	1.89	1.00	\$0.000	\$1.892	\$0.000	\$0.000	\$1.89
<b>Total:</b>			0.00	0.00	172.91	172.91	2.00	\$0.000	\$172.912	\$495.958	\$0.000	\$668.87

## Work Center Powdercoat

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
LAUG01												
10/14/09												
240			0.00	0.00	0.29	0.29	1.00	\$0.000	\$4.497	\$7.071	\$0.000	\$11.56
murd02												

November 6, 2009 11:58:09 AM

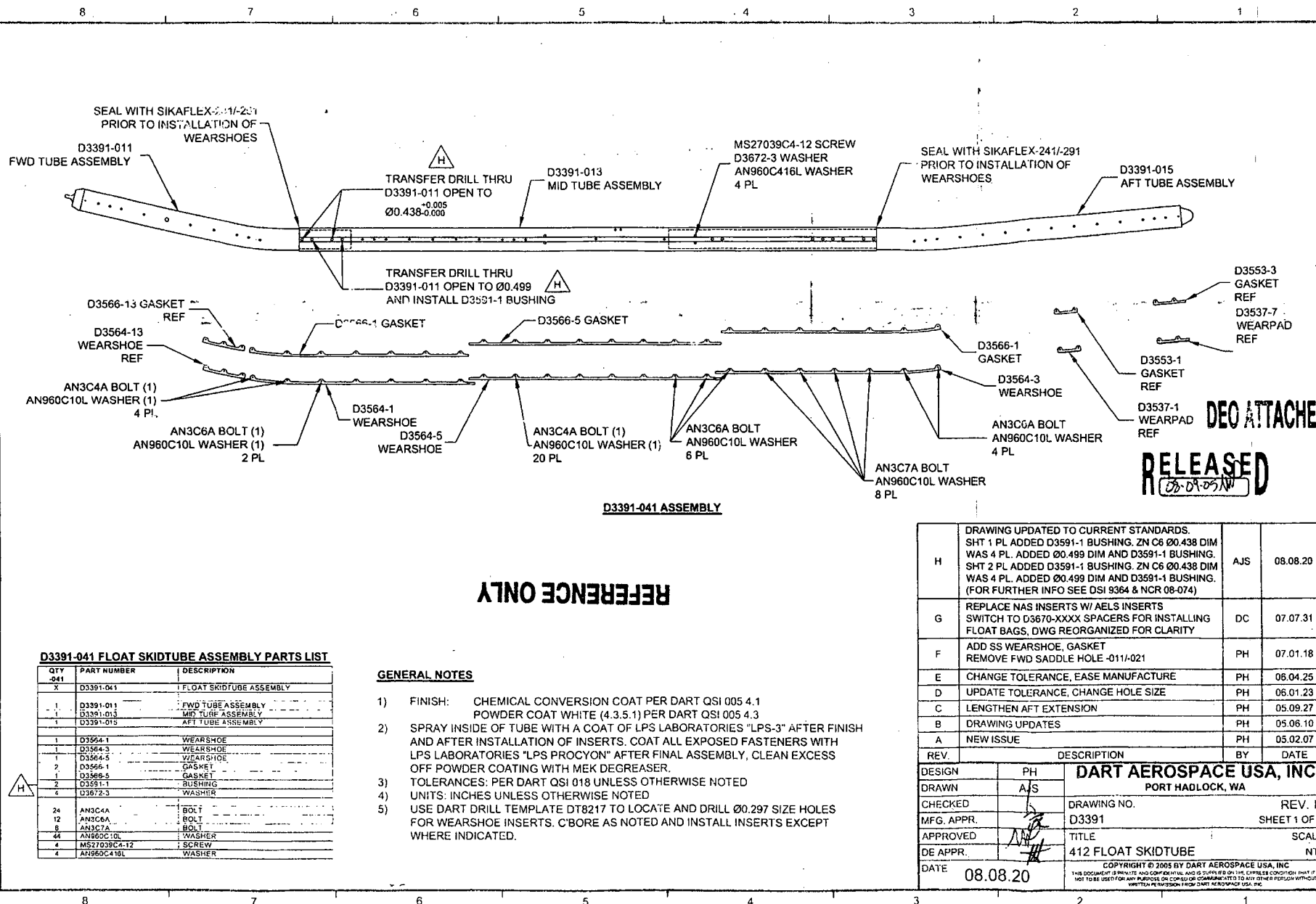
Work Order Summary

Page 1 of 2

9/21/09

240

	0.00	0.00	0.41	0.41	1.00	\$0.000	\$6.327	\$9.949	\$0.000	\$16.27
<b>Total:</b>	0.00	0.00	0.70	0.70	2.00	\$0.000	\$10.824	\$17.020	\$0.000	\$27.84



H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

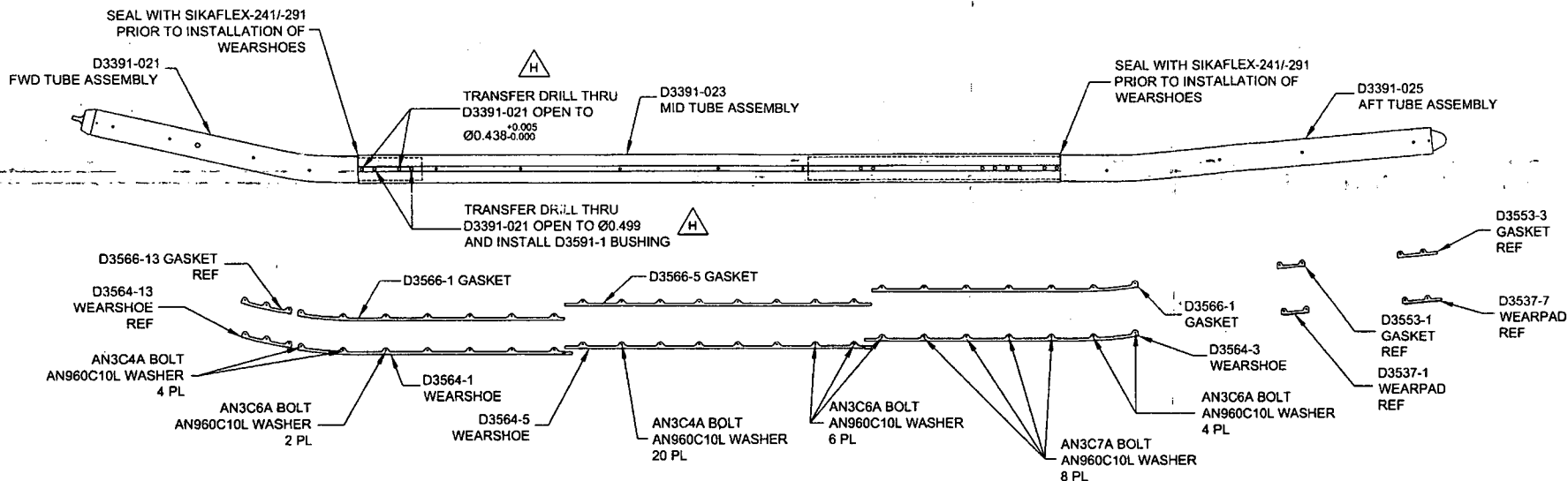
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





**D3391-043 ASSEMBLY**

**D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

**REFERENCE ONLY**

**DEO ATTACHED**

**RELEASED**  
28 09 05/07

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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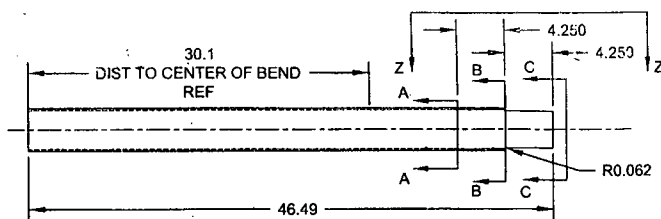
W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

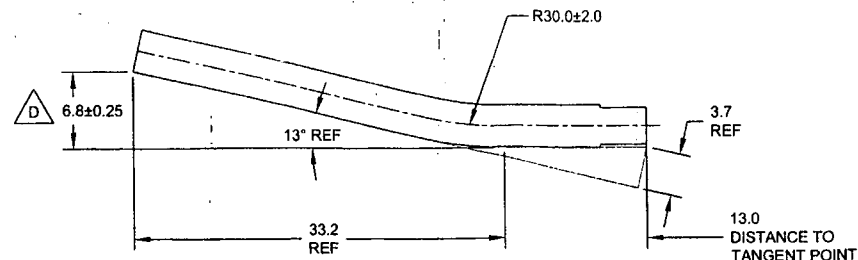
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NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

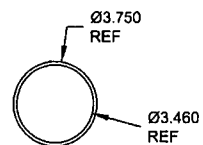
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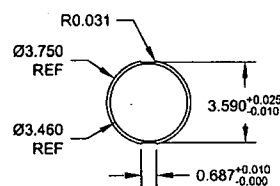
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D8013-047 SKIDTUBE MATERIAL)



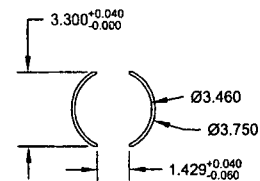
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



**SECTION A-A**  
SCALE 2X

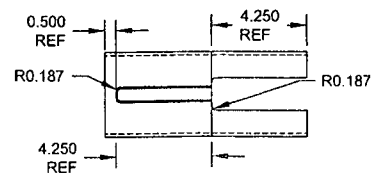


**SECTION B-B**  
SCALE 2X



**SECTION C-C**  
SCALE 2X

**REFERENCE: ONLY**



**VIEW Z-Z**  
SCALE 2X

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08-05-11

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CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 3 OF 8
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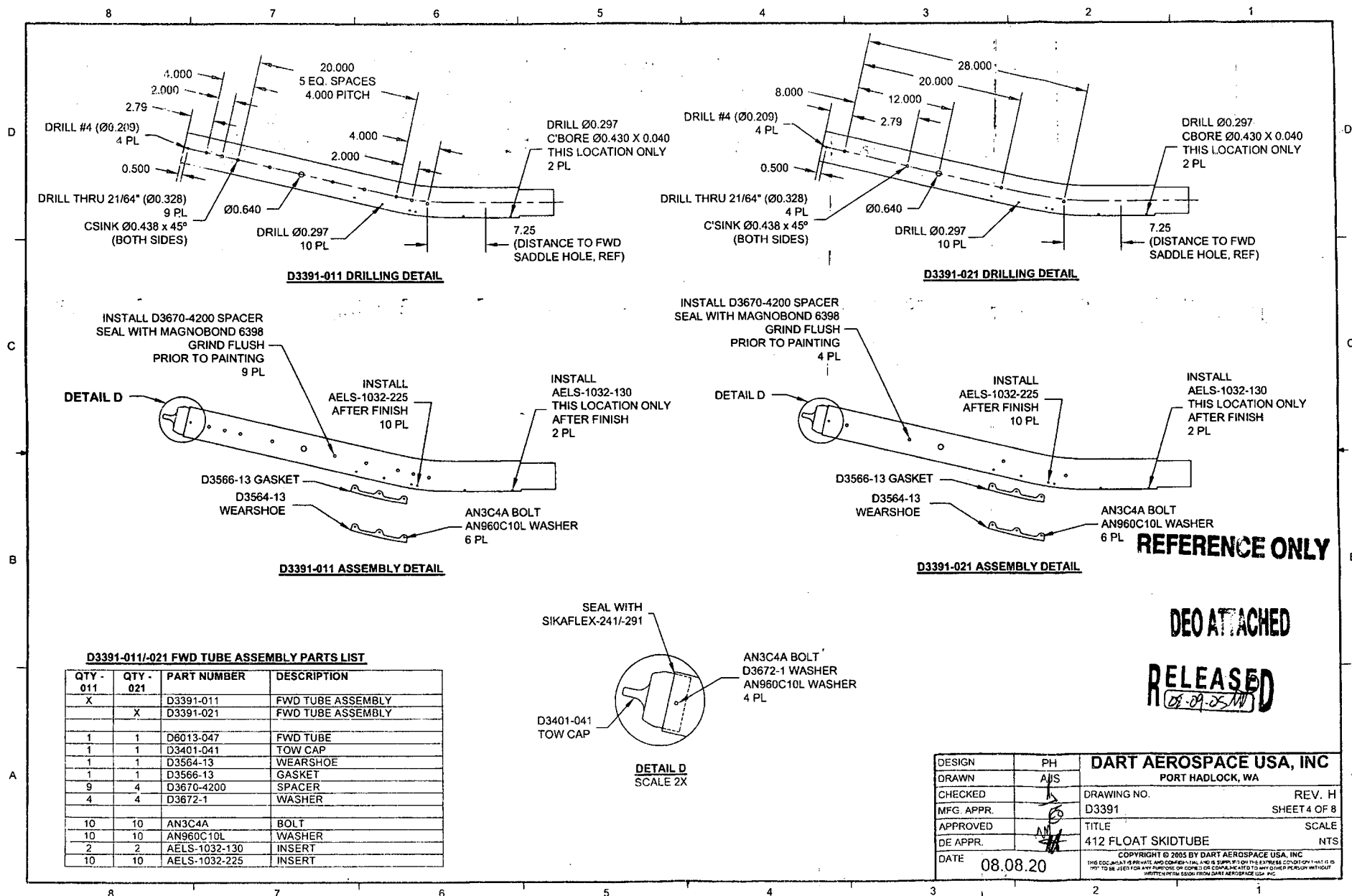
W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)					
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



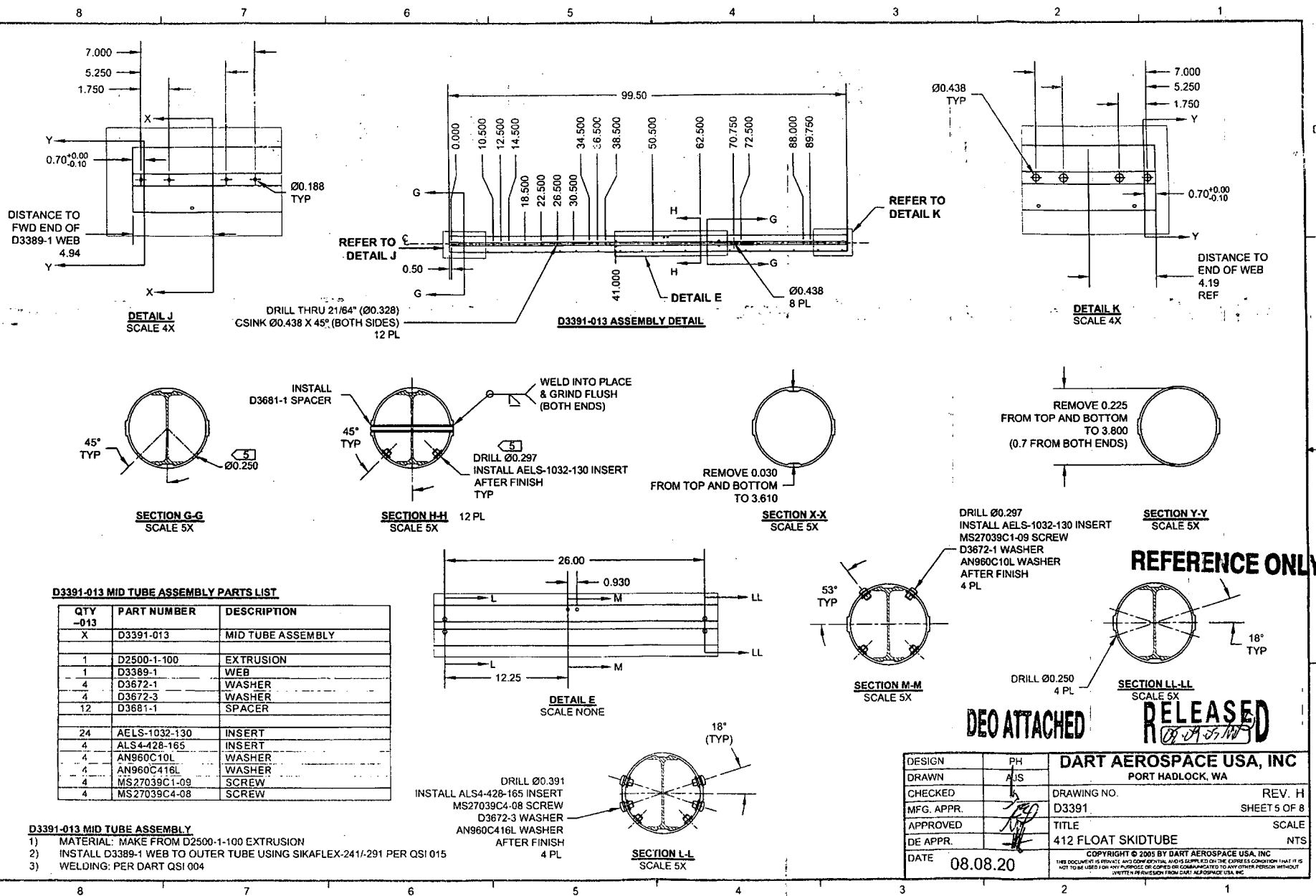
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DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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MFG. APPR.		D3391	SHEET 5 OF 8
APPROVED		TITLE	SCALE
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W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

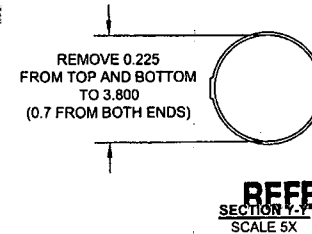
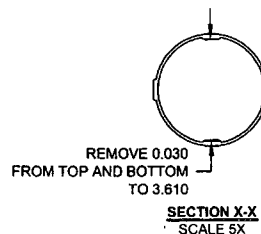
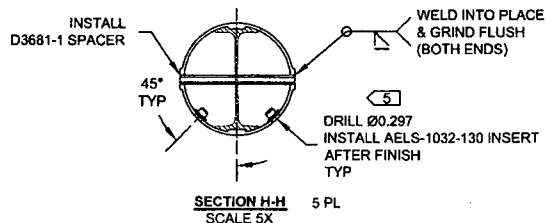
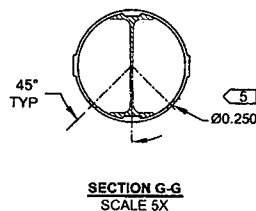
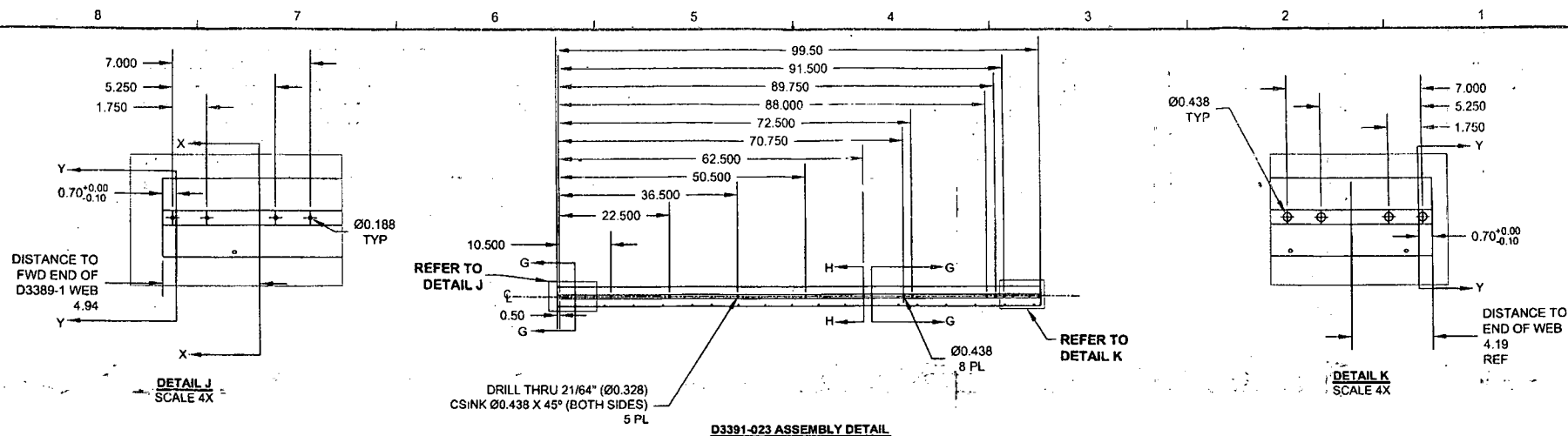
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





# D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY -	PART NUMBER	DESCRIPTION
023		
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

## D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

REFERENCE ONLY  
DEO ATTACHED  
RELEASED  
08-09-25-1W

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AS	PORT HADLOCK, WA
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 6 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
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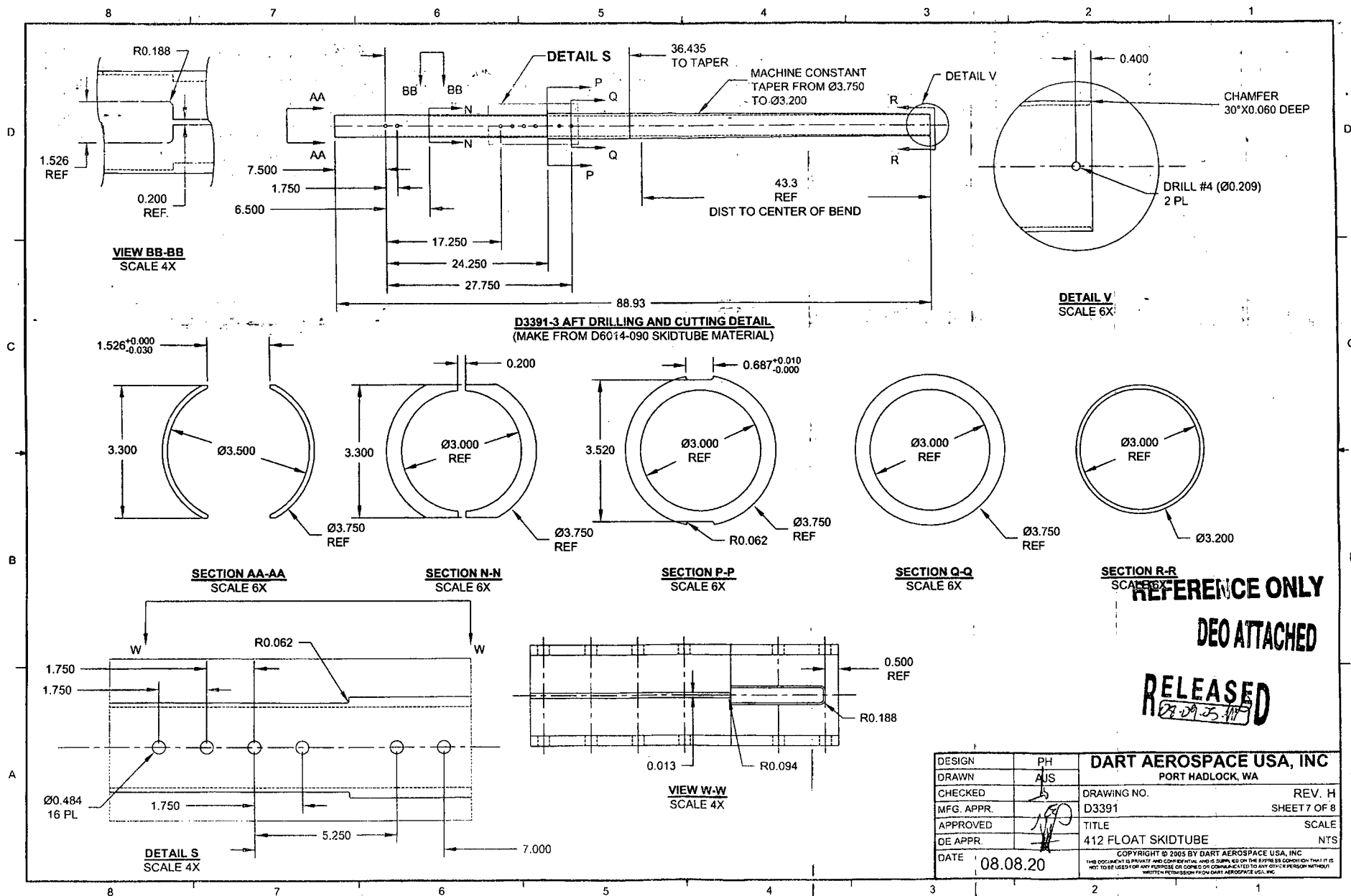
W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



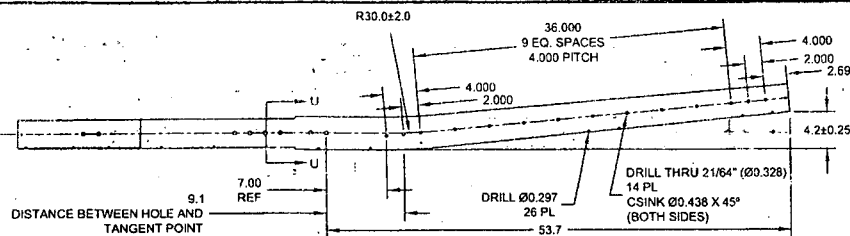
W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

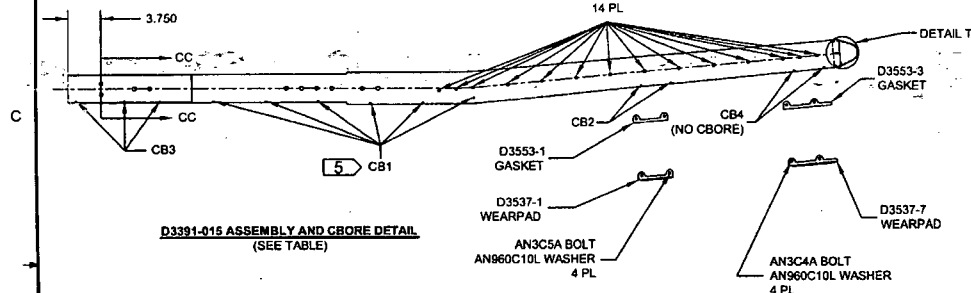
NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**D3391-015 BENDING AND DRILLING DETAIL**  
(SEE CBORE DETAIL BELOW)

INSTALL D3670-4200 SPACER  
SEAL WITH MAGNABOND 6398  
GRIND FLUSH  
PRIOR TO PAINTING  
14 PL



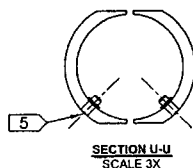
**D3391-015 ASSEMBLY AND CBORE DETAIL**  
(SEE TABLE)

**D3391-015-025 AFT TUBE ASSEMBLY PARTS LIST**

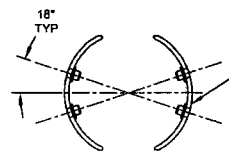
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2846	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4	4	ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND  
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø.430 X 0.170	AELS-1032-225
CB2	4	4	Ø.430 X 0.170	AELS-1032-130
CB3	6	6	Ø.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

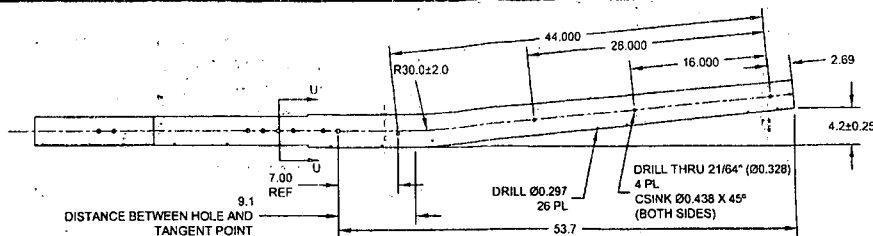


**SECTION U-U**  
SCALE 3X



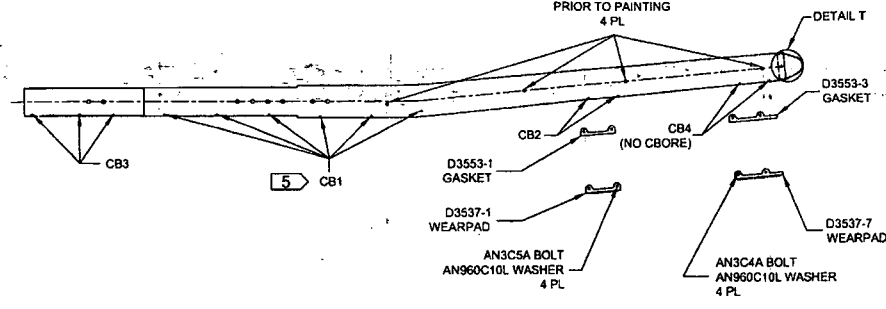
**SECTION CC-CC**  
SCALE 3X

DRILL Ø.391  
CBORE Ø.516 X 0.040 DEEP  
INSTALL ALS4-428-165 INSERT  
4 PL



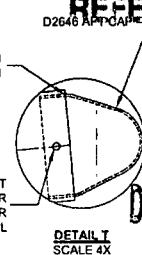
**D3391-025 BENDING AND DRILLING DETAIL**  
(SEE CBORE DETAIL BELOW)

INSTALL D3670-4200 SPACER  
SEAL WITH MAGNABOND 6398  
GRIND FLUSH  
PRIOR TO PAINTING  
4 PL



**D3391-025 ASSEMBLY AND CBORE DETAIL**  
(SEE TABLE)

SEAL WITH  
SIKAFLEX-241/291  
AN3C4A BOLT  
D3672-1 WASHER  
AN960C10L WASHER  
2 PL



**DETAIL T**  
SCALE 4X

**REFERENCE ONLY**

**DEO ATTACHED**

**RELEASED**  
08-09-05/10

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED	✓	DRAWING NO.	REV. H
MFG. APPR.	✓	D3391	SHEET 8 OF 8
APPROVED	✓	TITLE	SCALE
DE APPR.	✓	412 FLOAT SKIDTUBE	NTS
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W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

D3391	412 FLOAT SKIDTUBE	<b>ENGINEERING ORDER</b>		D3391-H-1	SHEET 1 OF 1	NTS
DRAWN <i>MP</i>	CHECKED <i>l</i>	MFG. APPR. <i>M</i>	APPROVED <i>MP</i>	DE APPR. <i>MP</i>		
DATE 09.09.23	DATE 09.09.24	DATE 09/09/25	DATE 09/09/30	DATE 09/09/30		

**PURPOSE:**

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

**CHANGE:**

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~  
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~  
~~LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS~~  
~~OFF POWDER COATING WITH MEK DEGREASER.~~

**RELEASED**  
2010-02-02

*MP*

**REFERENCE ONLY**

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries